Amendments to the Claims:

Claims 6 and 11 20 have been canceled without disclaimer or prejudice. This listing of claims will replace all prior versions, and listings of claims in the application:

1. (currently amended) A semi-solid metal (SSM) casting process, comprising:

providing a metal and a vertical indexing die casting machine,

heating the metal to a ~~chosen~~ first temperature,

cooling the metal to a second temperature ~~for a determined period of time~~ to form a semi solid metal based on an index time, ~~wherein the time can be zero~~; and

casting the semi-solid metal in the vertical indexing die casting machine.

2. (currently amended) ~~An~~ The SSM casting process according to claim 1, wherein the metal is an Al-Si alloy.

3. (currently amended) ~~An~~ The SSM casting process according to claim 2, wherein Al-Si alloy is a hypereutectic Al Si alloy comprising more than about 11.7 weight percent Si in Al.

4. (currently amended) ~~An~~ The SSM casting process according to claim 2, wherein Al-Si alloy is a hypoeutectic Al-Si alloy comprising less than about 11.7 weight percent Si in Al.

5. (currently amended) An The SSM casting process according to claim 2, wherein Al-Si alloy is a 380 alloy.

6. (cancelled)

7. (currently amended) ~~An~~ The SSM casting process according to claim ~~5~~ 1, wherein the vertical die indexing casting machine is a 1000 Ton Shuttle Machine.

8. (currently amended) ~~An~~ The SSM casting process according to claim ~~2~~ 1, wherein the ~~vertical die casting machine is an indexing type vertical die casting machine~~ indexing time is the time that ~~comprising~~ a shot sleeve ~~that~~ indexes between a pour station and a transfer station ~~requiring an indexing time~~.

9. (currently amended) ~~An~~ The SSM casting process according to claim ~~5~~ 8, wherein the first temperature ~~of metal~~ is ~~chosen such~~ is the temperature that the metal will form a semi-solid metal as it cools from indexing between the pour station to the transfer station.[[.]]

10. (currently amended) ~~An~~ The SSM casting process according to claim ~~8~~ 1, wherein the indexing time is chosen to achieve a determined rate of cooling so that the metal reaches a SSM range.

11. (cancelled)

12. (cancelled)

13. (cancelled)

14. (cancelled)

15. (cancelled)

16. (cancelled)

17. (cancelled)

18. (cancelled)

19. (cancelled)

20. (cancelled)

21. (new) The SSM casting process according to claim 1, wherein the first temperature is between about 10°C to about 15°C above a liquidus temperature for the metal.

22. (new) The SSM casting process according to claim 1, wherein the first temperature is between about 585°C to about 595°C.

23. (new) The SSM casting process according to claim 22, wherein the first temperature is between about 590°C to about 595°C.

24. (new) The SSM casting process according to claim 1, wherein the indexing time is zero.

25. (new) The SSM casting process according to claim 1, wherein the indexing time is between about .5 second to about 30 seconds.

26. (new) The SSM casting process according to claim 25, wherein the indexing time is about .5 to about 5 seconds.

27. (new) A cast product made by SSM, comprising:

an alloy metal that is heated to a first temperature and transferred to a shot sleeve in a vertical indexing die casting machine, wherein the metal is cooled to a second temperature to form a semi-solid metal based on an index time and is injected into a mold to form the cast product.

28. (new) The cast product according to claim 27, wherein the metal is an Al-Si alloy.

29. (new) The cast product according to claim 28, wherein Al-Si alloy is a hypereutectic Al-Si alloy comprising more than about 11.7 weight percent Si in Al.

30. (new) The cast product according to claim 28, wherein Al Si alloy is a hypoeutectic Al-Si alloy comprising less than about 11.7 weight percent Si in Al.

31. (new) The cast product according to claim 28, wherein Al-Si alloy is a 380 alloy.

32. (new) The cast product according to claim 27, wherein the vertical die indexing casting machine is a 1000 Ton Shuttle Machine.

33. (new) The cast product according to claim 27, wherein the indexing time is the time that the shot sleeve indexes between a pour station and a transfer station.

34. (new) The cast product according to claim 27, wherein the first temperature is the temperature that the metal will form the semi-solid metal as it cools from indexing between a pour station to a transfer station.

35. (new) The cast product according to claim 27, wherein the indexing time is chosen to achieve a determined rate of cooling so that the metal reaches a SSM range.

36. (new) The cast product according to claim 27, wherein the first temperature is between about 10°C to about 15°C about a liquidus temperature for the metal.

37. (new) The cast product according to claim 27, wherein the first temperature is between about 585°C to about 595°C.

38. (new) The cast product according to claim 37, wherein the first temperature is between about 590°C to about 595°C.

39. (new) The cast product according to claim 27, wherein the indexing time is zero.

40. (new) The cast product according to claim 27, wherein the indexing time is between about .5 second to about 30 seconds.

41. (new) The cast product according to claim 40, wherein the indexing time is about .5 to about 5 seconds.

42. (new) The cast product according to claim 27, wherein the cast product is an automotive product.

43. (new) The cast product according to claim 27, wherein the cast product can be selected from a group consisting suspension components, knuckles, control arms, bed plates, swash plates, air conditioning compressor pistons, engine valve bodies and pump housings.